

**AMENDMENTS TO THE CLAIMS**

Claims 1-32 (Canceled).

Claim 33 (Currently amended): An isolated nucleic acid comprising a nucleic acid encoding a bilin reductase comprising an amino acid consensus sequence as illustrated in Figure 5 or in Figure 10 and having bilin reductase activity. of any one of claims 1 through 20.

Claim 34 (Original): The nucleic acid of claim 33, wherein said nucleic acid is a vector.

Claim 35 (Currently amended): A cell comprising a heterologous nucleic acid comprising a nucleic acid encoding a bilin reductase bilin reductase comprising an amino acid consensus sequence as illustrated in Figure 5 or in Figure 10 and having bilin reductase activity. of any one of claims 1 through 20.

Claim 36 (Original): The cell of claim 35, wherein said cell is selected from the group consisting of an algal cell, a plant cell, a yeast cell, a bacterial cell, an insect cell, and a mammalian cell.

Claim 37 (Currently amended): An isolated nucleic acid comprising a nucleic acid that specifically hybridizes with a nucleic acid of SEQ ID NO:33 any one of claims 1 through 20 under stringent conditions comprising 0.2x SSC wash at 65°C and that encodes a polypeptide having bilin reductase activity, wherein said nucleic acid does not encode an hvir or an atrec polypeptide.

Claim 38 (Original): The nucleic acid of claim 37, wherein said nucleic acid is a vector.

Claims 39-79 (Canceled).

Claim 80 (New): The cell of claim 35, wherein said heterologous nucleic acid encodes an amino acid sequence of a polypeptide selected from the group consisting of HY2, athy2, slr0116, c362\_anab, ycp2-synpy, ycp3\_synpy, PcyA\_ANASP, PcyA\_NOSPU, PcyA\_SYNY3, PcyA\_SYN81, PcyA\_PROME, PebA\_SYNPY, PebA\_SYN81, PebA\_PROMA, PebA\_PROME, PebA\_NOSPU, PebB\_SYNPY, PebB\_SYN81, PebB\_PROMA, PebB\_PROME, PebB\_NOSPU, HY2\_ARATH, RCCR\_ARATH, and RCCR\_HORVU,

Claim 81 (New): The nucleic acid of claim 33, wherein said nucleic acid encodes an amino acid sequence of a polypeptide selected from the group consisting of HY2, athy2, slr0116, c362\_anab, ycp2-synpy, ycp3\_synpy, PcyA\_ANASP, PcyA\_NOSPU, PcyA\_SYNY3, PcyA\_SYN81, PcyA\_PROME, PebA\_SYNPY, PebA\_SYN81, PebA\_PROMA, PebA\_PROME, PebA\_NOSPU, PebB\_SYNPY, PebB\_SYN81, PebB\_PROMA, PebB\_PROME, PebB\_NOSPU, HY2\_ARATH, RCCR\_ARATH, and RCCR\_HORVU.

Claim 82 (New): The nucleic acid of claim 37 wherein said nucleic acid does not comprise rccr\_horvu or rccr\_arath.